

Unfortunately there is no simple black or white answer for determining soundness of ecological environment, the answer lies somewhere on a gradient scale of gray. The Texas Environmental Flows Science Advisory Committee (SAC) defines a sound ecological environment (SEE) as one that:

1. Sustains the full complement of native species in perpetuity;
2. Sustains key habitat features required by these species;
3. Retains key features of the natural flow regime required by these species to complete their life cycles; and
4. Sustains key ecosystem processes and services, such as elemental cycling and the productivity of important plant, and animal populations.

For determination of instream flow recommendations, the BBEST relied strictly on the four components of the SAC's definition of sound ecological environment to evaluate stream reaches and historical and current knowledge of the fish assemblages in each reach. Other species and factors like mussel assemblage and riparian composition simply had too little historical and/or current data to factor into the determination.

Using this strict definition, only three of the thirteen stream reaches evaluated by the BBEST could be considered to fully support SEE. All remaining reaches indicate some level of biological alteration and some level of ecological soundness. Where historical data on the fish assemblages in many reaches is sparse, the determination of biotic integrity is based on the best professional judgment of BBEST's fisheries experts.

High	Moderate	Moderate - Low	Low
Upper Brazos	Lower Brazos	Leon River	Middle Brazos
Salt Fork Brazos	Navasota River	N. Bosque R	Clear Fork Brazos River
Double Mtn. Fork	Yegua Creek		
	Lampasas River		
	Little River		
	San Bernard R		

Alterations in species diversity may be caused by a single factor or a combination of multiple factors, and may not necessarily be caused solely by modifications to instream flows. Anthropogenic influences potentially affecting species diversity in any given reach may include, but are not limited to: instream flow modifications, habitat fragmentation, alteration of instream habitats, reservoirs, point and non-point source pollutions, and changes in adjacent land-use.

The BBEST was not tasked with developing a restoration plan for reaches where any of the components of the SAC's definition of SEE has not been attained. Achieving the SAC's definition of SEE in its entirety and maintaining the full complement of native species in all reaches in perpetuity, will require a much larger effort than what e-flows can accomplish alone. Restoring the full complement of native species in all reaches of the Brazos basin would most likely require minimizing the influence of reservoirs, increasing the length of suitable riverine habitats, reintroduction of lost fish species, and restoration of riparian habitat.

While the BBEST's e-flows recommendations will not restore the full complement of native species to every reach of the Brazos basin, the BBEST is confident that the recommended e-flows are a starting point that will maintain the fish species and current level of ecological

soundness in the instream environments, preventing any future degradation caused solely by alteration of instream flows.